

What is claimed is:

1. A line spectral frequency coefficient vector quantizer comprising:

a prediction structure quantizer that comprises a first vector quantizer which non-structurally quantizes a line spectral frequency coefficient vector to calculate a candidate vector to be quantized, a predictor which calculates a predicted line spectral frequency vector of the line spectral frequency coefficient vector, and a first lattice quantizer which lattice-quantizes the candidate vector with reference to the predicted line spectral frequency vector to calculate a final prediction quantization vector of the line spectral frequency coefficient vector;

a non-prediction structure quantizer that comprises a second vector quantizer which non-structurally quantizes the line spectral frequency coefficient vector to calculate a candidate vector to be quantized and a second lattice quantizer which lattice-quantizes the candidate vector to calculate a final non-prediction quantization vector of the line spectral frequency coefficient vector; and

a switch that determines one having a small difference from the line spectral frequency coefficient vector, from the final prediction quantization vector and the final non-prediction quantization vector, as a final quantization vector of the line spectral frequency coefficient vector.

2. The line spectral frequency coefficient vector quantizer of claim 1, wherein the prediction structure quantizer and the non-prediction structure quantizer are connected in parallel to quantize the line spectral frequency coefficient vector.

3. The line spectral frequency coefficient vector quantizer of claim 1 or 2, wherein the first vector quantizer and the first lattice quantizer are connected in series to quantize the line spectral frequency coefficient vector.

4. The line spectral frequency coefficient vector quantizer of claim 1 or 2, wherein the second vector quantizer and the second lattice quantizer are connected in series to quantize the line spectral frequency coefficient vector.

5. The line spectral frequency coefficient vector quantizer of claim 1, wherein the first lattice quantizer is a pyramid vector quantizer.

6. The line spectral frequency coefficient vector quantizer of claim 1, wherein the second lattice quantizer is a pyramid vector quantizer.